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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

AMES RESEARCH CENTER, MOFFETT FIELD

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on-line at: http://ccf.arc.nasa.gov/dx/

NASA receives top "accountability reporting" award

NASA has been honored with the first-ever "Certificate in Excellence in Accountability Reporting" by the Association of Government Accountants (AGA) in recognition of the Agency's exemplary performance in the preparation, issuance and timeliness of its accountability report.

To receive the award, NASA's report had to meet stringent requirements concerning the complete and fair presentation of audited financial statements, performance information about NASA's programs and activities, as well as issues concerning internal controls, audits and other data.

NASA and the Social Security Administration were the only two federal agencies out of the government's 24 largest agencies so honored by the AGA. The extremely rigorous award process included thorough reviews by a panel of experts, as well as a requirement that the Agency receive an "unqualified" opinion on its financial statements. An "unqualified" opinion provides assurance that the statements present fairly, in all material respects, the financial position of the agency.

The two agencies were honored during a ceremony held Nov. 3 at the Library of Congress. NASA Administrator Daniel S. Goldin accepted the award on behalf of the agency.

"Whether it is sending robots to Mars, flying the Space Shuttle or managing a multi-billion dollar investment in America's future--it requires the accountability of all employees to ensure that we produce what we say we're going to produce for the American taxpayers," Goldin said. "At NASA, we are honored to be a part of American's investment for tomorrow. The AGA award reflects well on the entire NASA team."

"I can't think of adequate words that can express how proud I am of NASA and how proud I am of each and everyone of our team who contributed to this success," said NASA's Chief Financial Officer Arnold G. Holz, who attended the award ceremony with the NASA administrator and several other NASA officials. "NASA has achieved the highest possible financial statement audit ratings for five consecutive years by the NASA Inspector General and by the Arthur Andersen company. Also, we have received straight 'A's' on the Congressman Horne report card for financial reporting since inception of the report card process," Holtz said.

"Receiving the AGA award is yet another great achievement by our Chief Financial Officer (CFO) community and staffs and the entire NASA management team. Our professionalism has been reinforced yet again," Holtz said.

"This is the fifth year in a row that we have demonstrated that our financial management controls have been executed in compliance with approved accounting procedures," said Ames Chief Financial Officer Lewis Braxton III. "We're the only federal agency that I'm aware of that has demonstrated this capability five years in a row."

The Association of Government Accounts established the award program in conjunction with the federal Chief Financial Officer's council. The council's goal is to recognize federal agencies that have achieved excellence in the preparation, issuance and timeliness of accountability reports. The AGA is an 18,500-member professional association devoted to meeting the professional education needs of financial managers at all levels of government.

NASA's 1998 accountability report is available on the web at: http://ifmp.nasa.gov/codeb/library/1998AccountabilityReport.pdf

Ames' 1998 annual report is available at: http://cfo.arc.nasa.gov/

BY MICHAEL MEWHINNEY

NASA'S new virtual airport control tower opens at Ames

FutureFlight Central, the world's first full-scale virtual airport control tower, will open on Monday, Dec. 13, at Ames. A ribbon-cutting ceremony will be held starting at 9 a.m.

FutureFlight Central is designed to test — under realistic airport conditions and configurations — ways to combat potential air and runway traffic problems at commercial airports. Facility tours, featuring live demos of air traffic controllers and pilots interacting with a real-time simulation of San Francisco International Airport, will be conducted following the ceremony.

"NASA's FutureFlight Central is a world-class research facility dedicated to addressing the future needs of the nation's airports," said Ames Center Director Henry McDonald. "This facility will allow NASA, the FAA and their research partners to examine ways to increase the flow of aircraft through the national airspace system safely, efficiently and under all weather conditions."

Among the invited guests to the ribbon-cutting ceremony are NASA Administrator Daniel S. Goldin, Federal Aviation Administration (FAA) Administrator Jane Garvey, state and local legislators, and a host of top officials from government, industry and academia.

FutureFlight Central will permit integration of tomorrow's technologies in a risk-free simulation of any airport, airfield, and tower cab environment. The facility provides an opportunity for airlines to mitigate passenger delays by fine tuning airport hub operations, gate management and ramp movement procedures. It also allows airport managers an opportunity to study the effects of various improvements at their airport. Finally, it enables air traffic controllers to provide input and become familiar with new airport operations and technologies before construction is completed.

Real people interact in the live-action simulation just as in a real airport. Up to 12 air traffic controllers in the tower cab are in direct communication through a simulated radio and phone system with pilots and ramp controllers at stations on the first floor.

"We can accurately simulate any airport in the world," said Nancy Dorighi, FutureFlight Central facility manager. "The three-dimensional visual model of an airport is viewed out the 360-degree windows of the tower cab. The visual scene, along with specific airport traffic patterns, fleet mix and procedures, makes this a very credible operational testbed."

It is anticipated that airports, airlines and researchers will want to look primarily at the feasibility, safety, reliability and cost benefits of technologies prior to incorporating them into airports. In addition, testing will provide information that may assist in developing proposed changes to airport ground procedures and the construction of new airport facilities. "This is a

continued on back page

An intern's reflection on a summer at Ames

When I told my friends where I was working this summer, I got a familiar response. "Whoa, you're working at NASA Ames?"

Yes, I've had the good fortune of working in the Development and Communication office as a public affairs intern through the education associates program.

One of the highlights of my job has been working on the Speakers Bureau program, (SBP). This outreach program is designed to inform and educate the public about Ames' activities and projects. Civic groups, schools, professional organizations and clubs are a few of the many entities interested in learning more about Ames. Upon request from these groups, I looked for an appropriate speaker with the expertise to talk on the desired topic. Agreeing to speak, however, is voluntary which can make it difficult to fill every request. Nonetheless, the program is very successful. We're grateful to all who have participated in the program. This tremendous service to the community is appreciated and wouldn't be possible without your support.

In fact, I have taken the opportunity myself to speak with children about Ames, having worked on this program. As a child, I can still remember when guest speakers visited my school to speak. Now the tables have been turned, and I'm especially proud to be sharing news with others about Ames.

Jason Miller,(top row, second from right), former intern at Ames, poses with elementary children at their school during their space week event. Miller was a summer intern who is now back in full-time study at San Luis Obispo.

In retrospect, I have learned a lot. In particular, this program has shown me that there is more to this Center than remarkable accomplishments in research and technology. During the conclusion of my presentation to the children, I reminded them that it takes thousands of people to send astronauts up into space, and I've found that it takes class 'A' people to produce the class 'A' work.

BY JASON MILLER

Eerie looking folks entered the Ames Exchange's Halloween contest

Frankenstein couple won the prize for scariest costume.

Masked and costumed fun lovers made the Exchange party a huge success.

Minnie Mouse tied for the "cutest" prize category with a fairy.

Kaufhardt peer awards presented

Jill Willard (Code JAI) and Deb Glass (Code JAZ) were recently recognized by their peers for their achievements and accomplishments at an annual ceremony on September 30. Willard and Glass were presented with the Leslie A. Kaufhardt Peer award for their contributions to the Agency, their branches, the JA division, and other Center personnel and customers.

Jill Willard (left) and Deb Glass (right) following their recent recognition ceremony.

Willard was recognized for her contributions as an active participant in support of Agency and division acquisition initiatives, particularly in the consolidated contracting initiative and in performance based contracting, as well as for her contributions to continual improvement within the division. In addition, she has been a mentor and back-up for other branch personnel providing expert guidance and assistance.

Glass was recognized for her support to the Agency and division goals in addition to her many contributions to Code JAZ and its customers. In addition to her extremely heavy workload, Glass is actively participating in the NASA Acquisition Internet System (NAIS) team and sub-teams, which are developing procedures for conducting electronic procurements for the Agency.

The award winners have contributed to improved performance, efficiency, and morale, which has strengthened relationships within the division and with other directorates.

BY MARIE DORISH

The Lettermen sing Ames' praises

photo by Astrid Terlep

David Morse, Chief, Communication Office (far left) and Jeff Cross (far right) speak with the Lettermen singers inside the Gravitational Biology Research Facility during their recent visit to the Center. The Lettermen (left to right: Darren Dowle, Donovan Tea and Tony Butala) serenaded visitors with a spectacular impromptu rendition of the Star Spangled Banner in Hangar One.

Center Briefs

NASA fuels land mine removal efforts with Thiokol

The same rocket fuel that helps power the Space Shuttle as it thunders into orbit will now be taking on a new--perhaps surprising--role, with the potential to benefit millions of people worldwide. Leftover rocket fuel from NASA is being used to make a new flare that destroys land mines where they were buried, without using explosives. The flare was developed by Thiokol Propulsion in Brigham City, UT, the NASA contractor that designs and builds rocket motors for the Space Shuttle.

Astronomers find evidence of first planet orbiting a pair of stars

Astronomers have found evidence of the first known planet orbiting a pair of stars. Previously, planets have been found circling only single stars.

The Microlensing Planet Search (MPS) project, led by David Bennett and Sun Hong Rhie of the University of Notre Dame, South Bend, IN, used a technique called gravitational microlensing that may have revealed a planet about three times the mass of Jupiter orbiting a binary star system. The researchers, who are supported by NASA's Astronomical Search for Origins Program, the National Science Foundation (NSF) and the Research Corporation, reported their results in the November 4 issue of "Nature."

Gravitational lensing is based on a property first noted by Albert Einstein in the 1930s. When an object such as a star or planet moves in front of a more distant star, the gravity of this star or planet serves as a "lens," magnifying the light from the distant star and making it appear brighter.

X-43 hypersonic flight research vehicle delivered

The world's first hypersonic air-breathing, free-flight vehicle is no longer just a paper airplane. The first of three experimental vehicles, designated X-43A, recently arrived at NASA's Dryden Flight Research Center, Edwards, CA, to prepare for flight in May 2000. Flight of the X-43 vehicles will be the culmination of over 20 years of scramjet (supersonic combustible ramjet) research and the first time a non-rocket engine has powered vehicles at hypersonic speeds.

Built by Micro Craft, Inc., Tullahoma, TN, for NASA's Hyper-X program, the 12-foot-long, unpiloted X-43 vehicles will significantly expand the boundaries of air-breathing aircraft.

Three flights are planned --two at Mach 7 and one at Mach 10. The flight tests will be conducted within the western test range off the coast of southern California.

New partnership to have major economic impact

Ames Director Dr. Henry McDonald and San José State University President Dr. Robert Caret signed a memorandum of understanding recently to establish a partnership that officials believe will have a major impact on the economic and social development of Silicon Valley.

Ames and San José State University will work together to plan future R&D, technology commercialization and education partnerships at Ames Research Center's NASA Research Park, according to the terms of the agreement.

"Our goal is to develop a world-class, shared-use R&D campus by partnering with industry, academia and nonprofits in the NASA Research Park," McDonald said. "I am delighted to form this partnership with San José State University to conduct joint research in cutting-edge technologies and to develop new ideas to improve the region's education infrastructure."

"Partnerships between business, government and education are going to be absolutely crucial to our future," Caret said. "This partnership is an example of where we are headed in the next century." he said.

"We have planning MOUs with the University of California at Santa Cruz, Stanford University and Foothill-DeAnza Community College for R&D collaborations and educational programs at the NASA Research Park," said Ames' Chief of Development and Communication Michael Marlaire. "San José State University is an outstanding partner in the areas of education and workforce development, technology commercialization, disaster assistance and information technology research," he said.

"The partners will work with local colleges, such as Foothill-DeAnza and the National Hispanic University, to develop the workforce of tomorrow with an emphasis on underrepresented minority groups," said Dr. Nabil Ibrahim, San José State University associate vice president. "We will provide hands-on world-class education and training with some of the valley's pre-eminent high technology companies at the NASA Research Park."

Collaborations will include the development of K-12 science, math, engineering and technology programs, development of a teacher institute, and graduate, credential and extended education programs. The agreement envisions developing information technology for disaster research and application, including satellite remote sensing, signal processing and instrumentation. The two organizations will also collaborate in research involving human factors and information science.

Ames is NASA's leader in information technology, astrobiology and aerospace operations systems.

San José State University is among the state's top 10 organizations receiving monetary awards from NASA, having received $4.6 million in 1996.

BY MICHAEL MEWHINNEY

Ames employees elected AIAA associate fellows

Sixteen Ames researchers and managers have been elected Associate Fellows of the American Institute of Aeronautics and Astronautics (AIAA). Associate Fellows are individuals of distinction who have made notable and valuable contributions to the arts, sciences, or technology of aeronautics or astronautics.

"I am delighted that so many of our technical staff are being recognized for their contributions to the profession" said L.S. "Skip" Fletcher, Ames' Director of Aerospace and a past president of the AIAA.

Ames' new AIAA Associate Fellows elected are: Edward W. Aiken, William E. Berry, Nancy F. Bingham, Matthew W. Blake, John W. Boyd, Douglas G. Fletcher, Steven M. Green, Robert J. Hansen, G. Scott Hubbard, Stephen B. Margolis, Grant E. Palmer, James C. Ross, Jeffery A. Schroeder, Tim C. Tam, Joseph J. Totah, and Richard Zelenka. David P. Olynick, formerly of Ames, also was elected an AIAA Associate Fellow.

The new Ames AIAA Associate Fellows are part of a group of 184 individuals elected for the year 2000. The new AIAA Associate Fellows will be honored at an awards dinner on Monday, January 10, 2000, at the 38th AIAA Aerospace Sciences meeting and exhibit in Reno, Nevada.

BY MICHAEL MEWHINNEY

In Memoriam

Russell L. Hiserman died on October 5. He was 89 years old. He retired from Ames, where he worked as a photographer, 20 years ago. Hiserman had received a NASA award for his work on the Apollo space program.

Hiserman is survived by his wife of 68 years, Ruth; a daughter, Betty Sue Naegele; and four grandchildren and four great-grandchildren.

"SuperGuppy" pays Ames a visit

photo by Tom Reddy

The NASA "SuperGuppy" was here recently to pick up a payload from Lockheed Martin for a trip down to the Lockheed Martin "skunkworks" facility in Palmdale, CA. The unusual-looking prop aircraft was originally designed to haul rocket boosters.

The SuperGuppy is a modified Boeing 377 turbo prop cargo aircraft, the first of Boeing's commercial prop powered cargo planes. Smaller than a Boeing 747, but bigger than a C-130, the aircraft is based at Johnson Space Center. The aircraft was piloted by Arthur "A.C." Beall of San Mateo. The SuperGuppy is due to return soon to Ames to have a new landing gear installed.

STS-93 crew visits Ames

photo by Astrid Terlep

Col. Eileen Collins, Jeff Ashby and Michel Tognini from the STS-93 crew were at Ames recently attending technical briefings and training on the VMS.

Ames' 60th anniversary

Mark your calendars for the biggest party of the new millennium on Saturday, January 29, 2000, when Ames celebrates its 60th anniversay.

All current, former and retired Ames employees, both civil servants and contractors, are invited to attend the festive celebration to be held at the Stanford Faculty Club in Palo Alto. Among the 275 guests at the anniversary party, it is anticipated that there will be representatives from NASA Headquarters, private industry, and local and state government agencies.

The celebration will begin with a reception at 6:00 p.m.with hors d'oeuvres and a no-host bar. Dinner will be served from 7 p.m. to 7:45 p.m., followed by a program celebrating Ames' proud history. Jack Boyd, executive assistant to the Center director, will present a history of Ames, featuring a new video highlighting Ames' numerous accomplishments during the past 60 years. Boyd will also introduce Russ Robinson, a retired former Ames Director of Aeronautics. Robinson, who participated in ground breaking ceremonies for Ames on Dec. 20, 1939, will be followed by a video introduction of each of the 12 members of the Ames Hall of Fame.

Former Ames Center Director Dr. Hans Mark will be the evening's keynote speaker and will introduce two new Ames Fellows. Ames Center Director Dr. Henry McDonald will then offer some insights into the future of Ames. The party will conclude with dancing to the sounds of a live big band from 9 p.m. to 11 p.m.

Tickets are $65 per person and are close to sell out. The event is a black tie optional affair. For ticket information, contact Sheila Johnson at ext. 4-5054 or send her an email to: sajohnson@mail.arc.nasa.gov.

Gift shop sale

The NASA Ames Exchange Gift Shop is offering a 15% discount to all badged NASA employees! Each Monday through December 27, stop by the gift shop and receive a 15% discount off any purchase. Just in time to outfit everyone on your Christmas list in NASA attire. For more information, call Mary Ventura at ext. 4-5412.

Skyline College needs presenters

Skyline College is gearing up for the 20th annual "Expanding Your Horizons in Math and Science" conference. This conference is held every year with the goal of exposing 6th-12th grade young women to a variety of careers using math and/or science. The girls who attend the conference participate in three hands-on workshops throughout the day. The workshops are presented by talented and dedicated women who use some sort of math or science in their career. We expect to have about 1,000 young women attend this year's conference. The women come with a wide range of interests from "science is my favorite subject" to "I hate school." After the conference, the "I hate school" group often tells us about changing their minds and looking forward to trying harder in school!

Workshops in previous years have included veterinarians (usually a dog serves as the subject); doctors (do mock check-ups, read x-rays); and biotech professionals doing DNA fingerprinting, making root beer and yogurt. In addition, there are environmental workshops such as exposing of hazardous wastes; water pollution; household chemistry; computer workshops--working the internet; computer animations; engineering; math; life science--marine biology, plants, dissections, bugs; police science--fingerprint analysis; lawyers--mock trials, use of biological evidence, and many more.

We are looking for presenters for this year's conference. If you are a woman who uses math or science in your career and would like to be a role model and inspiration to young women, contact the author at (650) 738-4250 or email her at snitovsky@smcccd.cc.ca.us. The conference date is March 18, 2000.

BY SHARI SNITOVSKY

Tickets now available for the Ames ballroom dance club party

Come to the Ames Ballroom Dance Club (ABDC) holiday party and bring your friends. Get your tickets now from Kathy Sablan in bldg 240, room 201-A, or mail your check to her at mail stop 240-10. Admission is $10 per person for non-members of ABDC and free for members. Make checks payable to the Ames Ballroom Dance Club.

Event: Ames Ballroom Dance Club Holiday Party
Date: Saturday, December 4
Time: 7:00 p.m. to midnight (doors open at 6:30 p.m.)
Location: The Moffett Training and Conference Ctr, Bldg. 3
Highlights of the evening:
7:00 p.m. - Rumba lesson by expert instructors Hans and Renee Schmitt
9:00 p.m. - Dance demonstration by Hans and Renee S Schmitt, 1999 San Francisco Open Rhythm Champions and co-owners of "The Floor" in San Jose.

There will also be several door prizes given out during the evening and hors d'oeuvres laid out for your munching pleasure. Semi-formal attire is suggested. Spend a special evening of dancing and socializing with your co-workers and friends. Ames and Moffett employees will be responsible for obtaining security passes for their off-site guests.

If you have questions, call Kathy Sablan at ext. 4-6345, or email her at ksablan@mail.arc.nasa.gov. You may also contact Dee Shallenberger at ext. 4-5626, or you can email her at dshallenberger@mail.arc.nasa.gov.

Jewelry sale set

The NASA Ames exchange is sponsoring a costume jewelry sale in the Ames Café, on Tuesday, Dec. 7 and Wednesday Dec. 8 from 11:00 a.m. to 1:30 p.m. Just in time to dress up that holiday outfit, or pick up some Christmas gifts. For more information, contact Jodi Neal at ext. 4-0818.

Ames Exchange wishes you a Merry Christmas

On Thursday, December 16, the Ames Café is offering a Christmas meal, with everything you would expect from a holiday feast. Come enjoy baked ham, yams, green beans, dinner rolls and finish it off with pumpkin pie. The Christmas dinner will be served from 11:00 a.m. to 1:30 p.m. and will cost $4.75.

Nutcracker tickets on sale

This holiday season promises some special added cheer as the NASA Ames Exchange is offering tickets to the San José Cleveland Ballet's version of the classic tale, The Nutcracker.

Join us Thursday, December 9 at 7:30 p.m., at The San José Center for the Performing Arts.

Tickets are on sale for $29 at the NASA Ames Gift shop, Ames Café and the Ames Exchange office.

For more information, contact Jodi Neal at ext. 4-0818.

Galileo probe results suggest Jupiter had an ancient, chilly past

Jupiter's history may be much older and colder than previously believed, according to newly released findings from the Ames-managed descent probe of NASA's Galileo spacecraft published in the Nov. 18 edition of the journal Nature.

"This new information might shake up our view of how the solar system formed," said Dr. Tobias Owen, astronomy professor at the Institute for Astronomy of the University of Hawaii, Honolulu, HI, and a scientist on the Galileo probe neutral mass spectrometer instrument team. When Galileo arrived at Jupiter on Dec. 7, 1995, and dropped a probe into the atmosphere of the huge, gaseous planet, the mass spectrometer measured the chemical composition of Jupiter's atmosphere.

The spectrometer detected in Jupiter's atmosphere higher than expected concentrations of argon, krypton and xenon, three chemical elements called noble gases because they are independent and don't combine with other chemicals. Tiny traces of these gases are found in Earth's atmosphere, and argon is sometimes used like neon in advertising signs.

"Measuring the composition of Jupiter's atmosphere was a primary scientific objective of the probe, because we knew it could change our understanding of Jupiter's formation and evolution," said Galileo probe project scientist Dr. Richard Young of Ames "These latest probe results have done exactly that, and the measurements are the sort that could only have been obtained by in-situ measurements from an entry probe."

The discovery of these three gases in such high quantities at Jupiter raises questions about how they got there. "In order to catch these gases, Jupiter had to trap them physically by condensation or freezing," Owen said. This process, he said, requires extremely cold temperatures of about -240 degrees celsius (-400 degrees fahrenheit), colder than the surface of Pluto, the planet farthest from the Sun. Planetesimals (small objects orbiting the Sun) in the Kuiper Belt beyond Pluto would be this cold, but Jupiter is more than six times closer to the Sun and thus is much warmer. For this reason, Jupiter could not have been the site where the three noble gases were originally trapped.

"This raises some intriguing possibilities," Owen said. "One explanation suggests that Jupiter was formed out in the area around the Kuiper Belt and dragged inward to its present location. Another possibility is that the solar nebula, a huge cloud of gas and dust from which our solar system formed, was much colder than scientists believe," he said.

Artist's depiction of the moment of heat shield separation from the Galileo Probe's descent module. Direct scientific measurements of Jupiter's atmosphere started at this moment. As suggested by this painting, these important events occurred at a level somewhat below the visible cloud tops of Jupiter.

"A third hypothesis proposes that the solid materials that brought these noble gases to Jupiter began forming in the original huge, interstellar cloud of gas and dust even before it collapsed to form the solar nebula. That would make these icy materials older and more primitive than we had expected," he said.

"If either of the last two hypotheses proves to be correct, it would suggest that giant planets can form closer to their stars than current theories predict," Owen said. "This could help explain the new observations of planetary systems around other stars, in which such close-in giant planets are relatively common."

"These new Galileo probe results provide new insights into how planets form in the solar system and around other stars," said Galileo project scientist Dr. Torrence Johnson of NASA's Jet Propulsion Laboratory, Pasadena.

Owen's co-authors on the Nature article are: Drs. Paul Mahaffy and Hasso Niemann of NASA's Goddard Space Flight Center, Greenbelt, MD; Drs. Sushil Atreya and Thomas Donahue of the University of Michigan, Ann Arbor, MI; Dr. Akiva Bar-Nun of the University of Tel Aviv, Israel; and Dr. Imke de Pater of the University of California, Berkeley, CA. Although the data were collected by the Galileo probe in December 1995, careful and thorough analysis was necessary in Earth laboratories to verify the findings.

When it dropped 156 kilometers (97 miles) through Jupiter's atmosphere, the Galileo probe relayed data back to the main Galileo spacecraft more than 209,215 kilometers (130,000 miles) overhead for storage and transmission to Earth. The probe descended deeper into the atmosphere than expected, but was finally overcome by Jupiter's high temperatures and pressures.

The Galileo spacecraft, meanwhile, has been orbiting Jupiter and its moons for nearly four years, beaming back to Earth thousands of pictures and a wealth of scientific data.

Its two-year, primary mission ended in December 1997, but it was followed by the current, two-year extended mission.

The Galileo Project is managed by the Jet Propulsion Laboratory, Pasadena, CA; the Galileo atmospheric probe is managed by Ames. Further information and images about the Galileo mission to Jupiter are available on the Internet at: http://www.jpl.nasa.gov/galileo

BY KATHLEEN BURTON

In Remembrance

Janet Konrath passed away October 31 after a nine-year battle with cancer. Janet retired from Ames in 1993 after 37 years of service. She started her NASA career in 1956 and in that time worked her way up to assistant branch chief in the information systems division. Janet moved to Groveland, CA, in 1989 and for the last few years of service, flew from Groveland to San José on a private plane. Janet's ashes will be spread on a hilltop overlooking Pine Mountain Lake. Friends and former colleagues may consider contributions to the American Cancer Society.

Ames Sailing Club enjoys a bountiful second year

Several Ames sailing enthusiasts founded the Ames Sailing Club in late 1997 to give Moffett Federal Airfield resident agency employees and their families an opportunity to explore their interest in the art and sport of sailing. Geared towards people of all ages and experience levels, the club provides a wide range of activities throughout the year.

Friday afternoon sails out of Redwood City marina are fun, relaxing, and a great way to end the week, according to club members.

Membership has grown to 40 dues-paying members, and a larger number who follow the club's activities via its email mailing list and website. Members include boat owners, sailing instructors, yacht racers, racing crews, windsurfers, and individuals just interested in having fun on the water. In March of this year, the club officers presented an honorary membership to Dr. Harry McDonald, who commented at the ceremony that sailing is a sport that can be enjoyed by all ages.

A remarkable slate of speakers have educated club members and other interested guests during monthly lunchtime meetings. Kame Richards used NASA high-altitude aerial photographs to illustrate his fascinating talk on the tides and currents in San Francisco Bay. Mike Fitzgerald, an Ames scientist, spoke about his experience sailing across the Pacific to Hawaii. Norbert Ulbrich, another Ames researcher, spoke about the aerodynamic technology involved in the successful innovation of the upside-down winged keel for the Americas Cup contender in 1983. Stan Phillips and Greg Sherwood recalled their adventures in Antigua as first-time entrants in a major international regatta. Linda Newland, Northern California Yachtswoman of the year in 1998, contrasted the two occasions that she raced in the TransPac across the Pacific Ocean from Los Angeles to Hawaii. Scott Lighthall, skipper of the Chardonnaly II and Mark Kraft, president of Pacific Yachts, spoke of charter opportunities accessible from Santa Cruz.

In addition, a full calendar of sailing events was held in 1999. These included: Mothers' day and Fathers' day brunch sails; whale-watching trips on Monterey Bay; a Long Beach to Catalina cruise, and opportunities to participate in various local, national and international sailing regattas and events. Wednesday and Saturday fun races, cruising and racing on Monterey Bay, and Friday evening "Attitude Adjustment Sails" filled out the calendar. The season culminated in a great end- of-the-year party with over 35 attendees who thoroughly enjoyed themselves wind surfing, sailing, participating in several games and sharing a great variety of food and stories.

photo by Dominic Hart

Dr. McDonald is awarded honorary membership in the Ames Sailing Club by club officer Greg Sherwood.

For those interested in sailing instruction, the club offers informal coaching and workshops as well as informative discussions at meetings. The club also assists members in finding formal programs of instruction at several locations in the San Francisco and Monterey Bay areas.

No sailing experience is necessary to join or to participate in most club activities. General meetings will resume in February 2000 with what promises to be a great series of speakers and presentations. Meetings are held the second Thursday of the month from 11:30 a.m. to 1:00 p.m. in Bldg. N262, room 100.

For the most up-to-date news and information, an interactive calendar, photo album, and an on-line gift shop, visit the Ames Sailing Club website at http://sail.arc.nasa.gov. For more information, contact Stan Phillips at ext. 4-3530.

BY STAN PHILLIPS

Ames featured in Tech Briefs

The October edition of Tech Briefs featured several articles about technologies developed at Ames. One of those is the environmentally friendly anti-icing fluid, invented by Robert Lockyer, Code FMD; John Zuk, Code APT; and Leonard Haslim, Code AI. This liquid is designed for use as an anti-icing or deicing agent for the surfaces of aircraft, airport runways, roadways, bridges, nautical components, railroad switches, motor vehicles and other objects.

A second Ames-developed innovative product receiving attention was a series of lightweight, oxidation-resistant ceramics. These monolithic materials retain their shape and strength, and resist oxidation at temperatures up to 1,200 degrees celsius. This work was performed by Daniel Leiser, Code ASM; Ming-ta Hsu, Code ASM; and Timothy Chen, Code ASM.

Ames' Smart System Group also made the issue with their 3-D interactive space shuttle/space station docking simulation system. Ames is developing the project to improve the safety, accuracy and efficiency of spacecraft docking.

Finally, the virtual collaborative clinic project at Ames was mentioned. This work combines sophisticated medical imaging with high-speed, high-performance networking to allow doctors to receive and manipulate high-resolution, 24-bit, 3-D color images in near-real-time. This technology will enable collaboration and consultation over long distances for patient diagnosis and treatment.

Acquisition Improvement awards presented

A Headquarters Code H Acquisition Improvement Award was presented to the National Full-Scale Aerodynamic Complex (NFAC) fan blade replacement Source Evaluation Committee (SEC), on September 21. Awardees were, (pictured left to right): Greg Paulson, Laura Doty (for Gary French), Nhan Nguyen, Mark Lefler (Chair), Nancy Bingham (for Dr. Henry McDonald), and Joe Hurlbut. Not pictured: Bill Hunter and Jim Corliss, both from LaRC.

photo by Dominic Hart

Ames scientist may revolutionize medical treatment

Want to take control of your body? Tried Yoga and it did not help? Did you know that you can learn how to be in charge of many of your seemingly noncontrollable physical bodily reactions in just a few hours?

Dr. Cowings (left) with a woman subject wearing the AFS-2 lying on a tilt-table. Head up tilt makes blood pool in the legs and drops blood pressure. This subject was learning how to increase blood pressure.

One Ames research psychophysiologist can teach you how to do just that - specifically, how to control up to twenty physiological responses of the human body within six-hours of training.

Dr. Patricia S. Cowings, a research scientist in Ames' Gravitational Research Branch, is that person. She has been with NASA since 1971, and was recently recognized with the Ames Honor Award in the "Technology Development" category. The award was presented last month in recognition of her training of U.S. Army soldiers successfully using NASA technology to measure physiological and psychological responses to environmental stress. Plans are in place to train soldiers to control their own physiological responses and increase their tolerance to environmental stressors.

Autogenic Feedback Training (AFTE), developed by Dr. Cowings is aimed toward helping human beings in general, and astronauts particularly, to exert control over their bodies. By learning to recognize and correct bodily response changes, a person learns how to exercise his or her 'smooth muscles,' such as heart, stomach and blood vessels.

Cowings' work has the potential to revolutionize medical treatment for astronauts. Her six-hour procedure can help people going into space to avoid the motion sickness that is usually experienced by astronauts for the first several days. It can help the space traveler to better adapt to a weightless, microgravity environment, and to recover more rapidly after return to Earth..

"The most rewarding work at NASA is working directly with the astronauts - helping them do their thing in space. That's what I live for," says the researcher. Her experimental protocol has already been tested on three NASA missions. In addition, Dr. Cowings has worked with the MIR Space Station's cosmonauts and is seeking to expand her work with the American space 'walkers.'

According to Cowings, AFTE does not require face-to-face contact. She has shown that it can be taught at a distance with the use of personal computers and the internet. "I can teach a human being to lower his blood pressure or decrease his pulse whether he's in space or in the Sahara Desert."

Cowings's current research centers on testing AFTE as a treatment for multiple potential problems of spaceflight. The project entitled: "Autogenic-Feedback Training Exercise: A Multi-system Approach for Improving Health, Performance and Mood of Men and Women During Extended Spaceflight," will give this NASA technology a "real work out", as effects of training will be tested for motion sickness, improving orthostatic tolerance (low blood pressure) and human performance after sleep deprivation. Parallel research will be conducted with military collaborators under "real-life" field conditions and with patients who may gain relief from symptoms of nausea and fainting.

"Our goal is to meet the HEDS objectives of enabling extended space flight and improving the quality of life on Earth," Cowings said. "That's the bottom line."

By Victoria Kushnir

Givens to retire after nearly four decades of service

John Givens, manager of the Space Station Biological Research Project (SSBRP), is retiring after 38 years of dedicated service at Ames. John has led a series of NASA's most challenging and successful space missions. He has managed the building of probes that have gone to Venus and Jupiter. He has also managed the building of a life sciences laboratory for operation in space. His career stretches from 1961 as a research engineer working on radiative heat transfer, through 1999 as the current SSBRP project manager. Early in his career, he was a member of the Pioneer Venus project study team and then the Pioneer Venus Project Office. He was manager of the Galileo probe development, and chief of the Comet Nucleus Penetrator office.

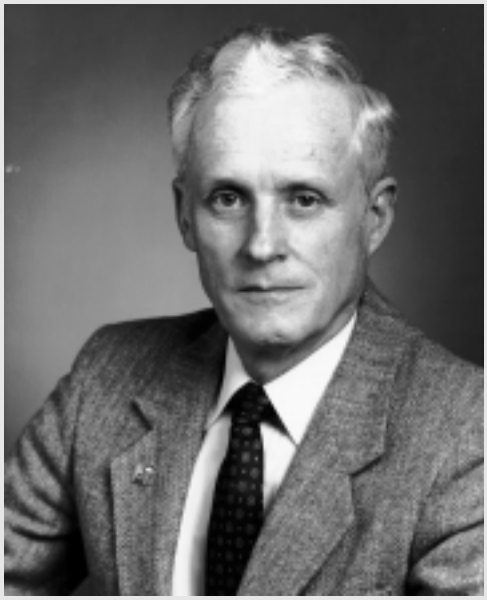
Givens spent the last 12 years overseeing design and development of Space Station life sciences hardware. This hardware includes six life science habitats for animals, cells and plants, two zero-g habitat holding racks and a 2.5 meter diameter centrifuge and life sciences glovebox (these latter two being built by the Japanese Space Agency, NASDA). The project also includes development of the ground and flight data systems capable of tracking and monitoring experiments and hardware as they operate in flight. An Ames operations team working with user-investigators located in the U.S. and other countries will perform operations. Given's competence, both technical and programmatic, his quiet diplomacy, high personal ethics and his very hard work have sustained and solidified Ames' important scientific design and development of the life sciences through extremely formidable challenges over the past twelve years. He has been a role model, teacher and mentor to the people on his team. He will be sorely missed by the SSBRP team and the Space Station community.

Ames has recognized his efforts with team awards -- Pioneer Venus study team, Pioneer Venus project spacecraft group, and Galileo Probe spacecraft development team group, and the NASA Outstanding Leadership Medal.

Givens' many friends are invited to a celebration of his NASA service to be held January 13, 3:30 p.m. to 5:00 p.m., Ames Training and Conference Center, patio room, bldg 3, on Severyns Ave. Hors d'ouevres and refreshments will be served for only $5.00 per person.

Payments should be made out to Janet Choi, who may be contacted at ext. 4-0605. You may bring your payment to Janet Choi in room 270 of bldg N244 or mail it to her at mail stop 244-19, Ames Research Center, Moffett Field, CA 94035.

All responses should be in by Friday, January 7, 2000.



John Givens

Astrobiology seminar held at UCSC campus

Ames' Dr. Baruch Blumberg, director of the NASA Astrobiology Institute, was a recent visitor to the University of California at Santa Cruz (UCSC) campus. On Nov. 8, Blumberg delivered a seminar entitled, "Astrobiology: A Program for Discovery" at the campus' Performing Arts Center. He shared with his audience some of his insights into the future of astrobiology research and its exciting and unpredictable nature.

photos by Lynda Watkins

Blumberg addresses students and professors at a recent astrobiology presentation on the Santa Cruz university campus.

Blumberg also met with key Santa Cruz personnel and toured the campus facilities. Ames has a memorandum of understanding in place with Santa Cruz to pursue research in astrobiology and information technology, along with projects in education, outreach, and the teacher institute aspects of the anticipated California Air and Space Center (CASC).

While at UCSC, Blumberg was hosted by Dr. James Gill, Associate Vice Chancellor for Research and Professor of Earth Sciences. Gill was standing in for UCSC Chancellor M.R.C. Greenwood who was away from the campus. Gill oversees research policy, plus the contracts and grants office, government research affairs and regional economic development for UCSC. He is also director of the Monterey Bay education, science and technology center, a cornerstone of the reuse of the old Fort Ord army base.

Ames' Baruch Blumberg (left) and UCSC' James Gill (right) get acquainted during a recent visit of the Ames NAI director to the coastal campus.

Calendar

Ames Bowling League will be starting the 99/00 season at Palo Alto Bowl every Tuesday at 6pm on Sept. 7. The season is 33 weeks long and ends April 25 with a banquet the week after. The league is in need of bowlers to join teams, as well as substitutes. POC: Mina Cappuccio, mcappuccio@mail.arc.nasa.gov, at ext. 4-1313 or Mike Liu, mliu@mail.arc.nasa.gov, at ext. 4-4357.

Ames Ballroom Dance Club. Tuesdays: Cha Cha 11/9, Bolero 11/16, 11/23, 11/30. No classes during the month of December. 3 levels of classes, from Beg. to Int., 5:15 - 6:45pm. Moffett Training and Conference Center, Bldg. 3/Showroom. Women dancers are especially encouraged to join. Holiday party will be 12/4, watch for upcoming details! POC: Helen Hwang, hwang@dm1.arc.nasa.gov.

Model HO/HOn3 Railroad Train Club at Moffett Field invites train buffs to visit and join the club in Bldg. 126, across from the south end of Hangar One. The club is in particular need of low voltage electricians and scenery builders and maintainers. Work nights are usually on Friday nights from 7:30 p.m. to 9:30 p.m. Play time is Sunday from 2 p.m. to 4 p.m. For more info, call John Donovan at (408) 735-4954 (W) or (408) 281-2899 (H).

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung 4-2875 or Lich Tran 4-5997.

Ames Child Care Center Board of Directors Meeting, Wednesdays, 12 noon to 1 p.m., N-213/Rm. 204,. POC: Debbie Wood at ext. 4-0256.

Ames Sailing Club Meeting, Dec 9, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Stan Phillips, ext. 4-3530.

Professional Administrative Council (PAC) Meeting, Dec 9 , 10:30 a.m. to 11:30 a.m. Location TBD. POC: Janette Rocha, ext. 4-3371.

NFFE Local 997 Union General Meeting, Dec 15, noon to 1 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

Ames Amateur Radio Club, Dec 16, 12 noon, N-260/Conf. Rm. POC: Mike Herrick, K6EAA at ext. 4-5477.

Ames Asian American Pacific Islander Advisory Group Meeting, Dec 16, 11:30 a.m. to 1 p.m., N-241/Rm. B2. POC: Daryl Wong, ext. 4-6889 or Brett Vu, ext. 4-0911.

Native American Advisory Committee Mtg, Dec 28, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

Ames Contractor Council Meeting, Jan 5, 11 a.m., N-200 Comm. Rm. POC: Jack Stanley at ext. 4-2345.

Environmental, Health and Safety Monthly Information Forum, Jan 6, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1078. POC: Linda Vrabel at ext. 4-0924.

Hispanic Advisory Committee for Employees, Jan 6, 11:45 a.m. to 12:30 p.m., N-241/Rm 237. POC: Mary R. Valdez, at ext. 4-5819.

Ames African American Advisory Group Meeting, Jan 6, 11:30 a.m. to 12:30 p.m. POC: Robert Finnie at ext. 4-5230. Contact Robert for meeting place.

Nat'l Association of Retired Federal Employees, San Jose Chapter #50, Meeting, Jan 7, at the Elk's Club, 44 W. Alma Avenue, San Jose. Social hour: 10:30 a.m. Prog. & bus. mtg. follow lunch at 11:30 a.m. POCs: Mr. Rod Peery, Pres., (650) 967-9418 or NARFE 1-800-627-3394.

Ames Classifieds

Ads for the next issue should be sent to *astrogram@mail.arc.nasa.gov* by the Monday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost & found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

Housing

Roommate wanted to share clean, spacious, Sunnyvale apartment, 4 mls from Ames. Prefer male, N/S. $600/mo + 1/2 utils. Rob (650) 691-9961.

For sale by owner, $529K, small horse ranch for sale near Watsonville. Royal oaks, California/scenic rural area. 3 acres with trees and lots of open space. 3 bd/2 ba home/family room w/fireplace. Front/rear decks w/hot tub room. 2 car garage w/laundry room & storage room. Barn, tack room, corrals, workshop/electricity. Property fenced and outside lighting. For more info, call Ron (408) 736-2150. Lv msg/phn # or call (831) 722-0130.

Seeking N/S female to share 2bd/1.5ba. Mt. View townhouse, pool, w/d, fireplace, garage, quiet private street. $800/mo + 1/2 util. Marion (650) 962-8814.

2 bd/1 ba apartment in Sunnyvale. Approx 3 mls from Ames. Available now. $1,250 mo. Margaret (650) 570-5244.

3 bd/2.5 ba, den, deck, 1739 sf, only 2 yrs old, Stockton: golf, bike, sail, swim, take train to work. Gated community, master-planned. $181,500. Call (209) 329-0099 or formerFOS@msn.com.

Room for rent in house in midtown Palo Alto. Kitchen, bathroom & pool privileges. Tenant must be orderly, N/S. $600/mo. Dr. Jim Stevenson, ext. 45720.

Transportation

'70 Mustang Grande, 351 Clev. and C6 tranny, 158K mls, $4,200. Richard (408) 733-1629.

'84 Olds Delta 88, 176K mls, 2dr, loaded, very gd cond. $1,900. Call (408) 882-4264 or (408) 735-0319.

'85 Toyota Corolla SR5 coupe, white, 2-dr, 5 speed manual transmission, pwr steering, A/C, AM/FM cass, 180K mls, good condition. $1500. Jane (650) 949-1728.

'85 Saab 900 Turbo, 4 door, 5 speed, sunroof, 123K mls, $3,200. Richard (408) 733-1629.

'88 Toyota SR5 4X4, 150K mls, deluxe, perfect condition, $6,900. Randy (408) 734-9550.

'89 Ford Mustang LX, 2.3L, automatic transmission with AC, power steering, power locks, am/fm/cassette stereo in great condition, 143K mls and runs great. $2,200 or B/O. Marita (650) 570-5748.

'90 Mazda Miata 101,000K mls, am/fm radio, good condition, white, soft top. $5,000 or B/O. Ian Hamilton (415) 749-1729.

'92 Maxima SE, excellent condition, low mls, leather interior, ABS, moonroof, CD, rear spoiler. $10,300. Yao (510) 429-1829.

'93 Mercury Capri convertible, new top, white w/ black top, gray interior. Looks & runs great. Cruise control, power brakes & windows, security system, am/fm cass. Orig. owner, recent smog & brake check. Fun car. $4,800 or B/O. Call (415) 861-4488.

'95 Chevy Blazer LT,4X4,4dr., fully loaded, 75,100K mls, asking $14,000 or B/O. Bob (408) 736-4039.

Miscellaneous

Philips Magnavox TV $100; Aiwa stereo $50; Epson Stylus color writer 740, 2 months old, $150. Charles (408) 736 1319.

8 foot Flatie Knee sail boat, complete, $500. Randy (408) 734-9550.

Face painting by Marsha for on-site events, birthday and Christmas parties, etc. Call (650) 321-9244.

Digital answering machine (requires no tapes), black. $15. SONY cordless phone. white, 10-channel. $15. Call (408) 295-2160.

New Maxime chair & ottoman from Ethan Allen (doesn't match w/other furniture). Chair:W31xD36x39h, $819. Ottoman: 25x20x18, $369. Can negotiate. Stripes in butte/charcoal. John (408) 773-8078.

Renovating house in Campbell. Need to have old redwood siding & studs, wood doors various sizes removed from back yard. Make offer. Tree rounds, you chop for firewood, $50 per truck load or B/O. Robin (650) 968-6102.

Computer desk, W:59", D:24", H:57", slide-out keyboard shelf w/lift-lid drawer, 2 file drawers, hutch w/2 adj. shelfs and corkboard, $75 or B/O. Call (408) 723-3804. Picture available on web @ http://www.afo.com/images product/ main/8636.jpg

Set of 99 Honda Civic Si factory springs. Inexpensive way to upgrade the handling of your Civic DX or EX. $75 for the set. Call (650) 851-5290.

Vacuum cleaner, Hoover self-propelled upright w/all attachments, seldom used, $150. Call (408) 745-7437.

Logitech 400 dpi color scanman for Windows w/ manuals and software, $15. Call (408) 295-2160.

4 tickets for sale, $32 each, for the San Jose Sharks vs St. Louis hockey game on Jan. 11. Seats in section 206 row 6. Call (408) 735-0524.

Digital answering machine (requires no tapes), black. $15. Call (408) 295-2160.

Snow chains, various tire sizes available. 3 sets at $20 ea. Kristina (408) 307-1424 or (408) 629-0487.

Wall bed in oak cabinet, includes single mattress. Excellent condition, $220. Call (650) 969-8714.

Wanted to buy: used stationary exercise bike. Nicole (408) 975-0433.

Ames Retirements

Name	Code	Date
Edward Rogers	AFE	8/31/99

Formal dining room set; contemporary. Pedestal with beveled glass table and six high back fabric chairs - white. Great condition, $600. Jan (925) 560-9701.

Flex-A-Bed: twin/long (38" X 84"), remote hand control-electric, multilevel positioning w/vibrator, seldom used, like new condition, $800. Charlie (408) 739-8310.

Brand new mountain bike, $600 ($800 new); Yamaha keyboard, $100; aerobic conditioner, $20; exercise bike, $25; rowing machine, $40; like new 4 Wheel walker, $150; wooden desk, $80. Call (650) 948-1981.

Furniture--solid maple coffee table (Haywood Wakefield) $125; solid walnut credenza (4 doors) $100; pair of end tables/speakers $45l; Singer sewing machine $55; upholstered rocking chair $35. Call (408) 358-1608.

Bunk bed with red tubular metal frame includes two adult sized mattresses, side rails and ladder. Excellent condition. $125. Gary or Stephanie (650) 369-9944.

Two cell phones--one analog, one digital $30 each. Ben (408) 274-5474.

Moving sale. RCA swivel console TV $85; Maytag washer & dryer, $45 ea.; GE Spacesaver microwave (w/ mounting brackets), $75; Den/Library system, versatile, 6 pieces, drk. Cherry, $675; desk/hutch, solid oak, $125; 70's Cost Plus Mexican furniture, several pieces, (call); patio table/4 chairs, $100. Call (650) 941-2784.

Computer system: 225 mhz (604e) PowerTower Pro, 2GB HD, internal zip, Mac OS 8.0 and Misc. SW, 17" monitor, 56k external modem, Epson 600 color printer; $1,250. Call (650) 941-2784 eve.

Entertainment center - 1 TV stand wooden cabinet adjunct by a 3 compartment (for VCR, stereo etc) glass door wooden cabinet $65; 2 maple wood edge tables, $5 each; wooden desk (2 drawer) $15; wooden desk (4 drawer) $20. All B/O. Call (408) 446-0654 after 8 p.m.

Vivitar 728C Zoom auto focus flash for sale: $47. Call (408) 926-4033.

Maytag clothes washer (large capacity), $80. Maytag clothes dryer (electric), $80. GE electric stove/oven, $90. Full-sized futon w/cover, $110. All items are in fine condition. Jeff (650) 251-0000.

Casio Keyboard: Model CT-636 Tone Bank, excellent condition, $40. Bruce (831) 458-5247.

Vacation rental

Lake Tahoe-Squaw Valley townhse, 3bd/2ba, View of slopes, close to lifts. Wkend $470, midwk $175 night. Includes linens, firewood. Call (650) 968-4155 or email: DBMcKellar@aol.com

NASA'S new virtual airport control tower opens at Ames

continued from front page

totally new approach to airport planning that wasn't possible just a few years ago," says Dorighi.

Computer software, provided by Raytheon Systems Co., Arlington, TX, is integrated with the tower simulation hardware technologies at Ames to support both radar and out-the-window visual simulation. The facility's second floor is designed to replicate a typical air traffic control tower. The tower cab has reconfigurable site-specific displays, such as terminal area radar, surface radar and weather, installed based on FAA specifications.

Twelve rear-projection video screens provide a seamless 360-degree high-resolution view of the airport or other scenes being depicted. The imaging system, powered by supercomputers, provides a realistic view of weather conditions, environmental and seasonal effects and the movement of up to 200 active aircraft and ground vehicles.

Constructed at a cost of $10 million, the two-story facility was jointly funded by NASA and the FAA. The facility is dedicated to the memory of Stanton R. Harke, the facility's first project manager, who passed away on April 25, 1999 at the age of 58 from cancer. NASA FutureFlight Central is scheduled to begin operations in January.

Daniel, Mann, Johnson & Mendenhall, Moffett Field, CA, served as project engineers. Other project participants include SGI, Inc. of Mountain View, CA, and Evans Console of Calgary, Alberta, Canada. Representatives from the FAA's air traffic control supervisors committee (SUPCOM), the National Air Traffic Controller's Association (NATCA), as well as the Air Transport Association (ATA), contributed in all phases of the facility's design.

Images of the facility are available via the Internet at the following URL:

http://ffc.arc.nasa.gov

BY MICHAEL MEWHINNEY

FutureFlight Central to hold open house

Who: For Ames resident staff
When: December 16 from 9:00 a.m. to 3:00 p.m.
Where: The main entrance is accessed from the courtyard between buildings 262 and 269.

For information on FutureFlight Central, you can visit their website at: http://ffc.arc.nasa.gov.

Café holiday hours closure

The Ames Café will be closed for construction from Monday, December 27 through December 31.

There will be a catering truck outside the cafe from 6:30 a.m. to 1:30 p.m. for your convenience. The seating in the dining room will be available entering from the east side of the café only.

Ames radio info for employees

1700KHz a.m. radio--information radio announcements for NASA/Ames employees during emergencies.

THE AMES Astrogram

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THE AMES Astrogram

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